



TEACHER GUIDE

- Assessment Rubric 4
- How Is Our Resource Organized? 5
- Bloom’s Taxonomy for Reading Comprehension 6
- Vocabulary 6



STUDENT HANDOUTS

- Reading Comprehension

1. What Do We Classify?	
2. Formal Classification	
3. Warm-Blooded Animals vs. Cold-Blooded Animals	
4. Vertebrates.....	
5. Invertebrates	
6. Animal Adaptations	
7. A Case Study: The Koala and Its Adaptations	

- 8. Evolution and the Fossil Record..... 7
- Hands-on Activities 11
- Crossword 15
- Word Search 16
- Comprehension Quiz 17



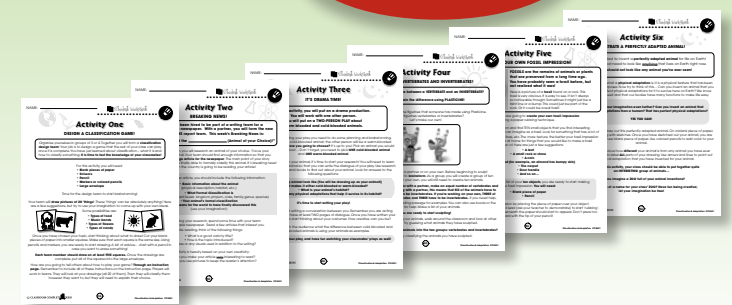
EASY MARKING™ ANSWER KEY 19

MINI POSTERS 21

✓ **6 BONUS Activity Pages!** Additional worksheets for your students

- Go to our website: www.classroomcompletepress.com/bonus
- Enter item CC4501 or Classification & Adaptation
- Enter pass code CC4501D for Activity Pages..

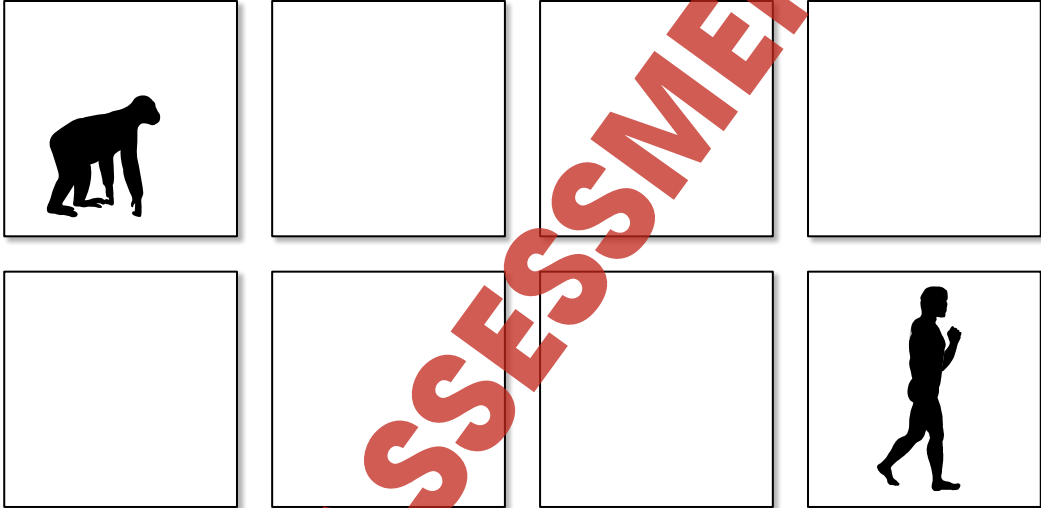
FREE!





Evolution and the Fossil Record

1. **EVOLUTION** is the change of **POPULATIONS** of living organisms over time. Humans have evolved too. It is widely believed that humans evolved from the ape. In the boxes below, draw what you think the different stages of human evolution might look like. The first drawing (the ape) and the last drawing (the human) have been done for you.



2. Complete each sentence with a word from the list. Use a dictionary to help you.

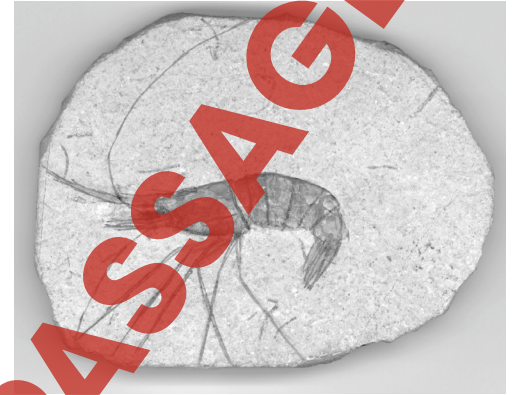
Evolution fossil sedimentary rock paleontologist

- a) A _____ is a scientist that studies fossils.
 b) The remains of an animal or plant that are preserved from a long time ago are called a _____.
 c) _____ is a kind of rock made of hardened layers of gravel, sand and mud. Fossils are often found in this kind of rock.
 d) _____ is the change of populations of living organisms over time.



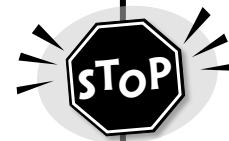
Evolution and the Fossil Record

When was the last time you saw a dinosaur running across the street? Dinosaurs no longer exist. Today, other animals exist, doing the same things that dinosaurs used to do, searching for food. Birds fly in the skies, fish swim in the oceans, and bears walk on the land. Life on Earth has changed over time. This is called **evolution**. Evolution is the change of populations of living organisms over time.



Scientists have been collecting information and evidence of evolution for over 300 years. You might wonder how scientists can learn about life from so long ago when cameras and news clips didn't exist. Scientists gathered a lot of information by studying **fossils**. What is a fossil? A fossil is the remains of an animal or plant preserved from a long time ago. A scientist that studies fossils is called a **paleontologist** - that's a big word! The remains in the picture above were found inside a rock.

Have you ever picked up a rock and found a **PATTERN** on it? Describe what it looked like.



The **fossil record** is the most accurate way to study past life on Earth. The fossil record clearly shows changes in life through layers of **sedimentary rock**. Sedimentary rock is made of layers of gravel, sand and mud (sediment) that have collected over time. Bits and pieces of once living things are trapped in between these layers. Over time, the layers of sediment are flattened down and eventually harden and form sedimentary rock. The buried plant and animal remains become fossils within the sedimentary layers.



Evolution and the Fossil Record

1. Put a check mark (✓) next to the answer that best finishes the sentence.

- a) Scientists have been collecting information and evidence of evolution for...
 A scientists do not study evolution.
 B the last ten years.
 C as long as life forms have existed.
 D over 300 years.
- b) Evolution is the change of populations of...
 A human beings over generations.
 B living organisms over time.
 C plants who live longer than 100 years.
 D living organisms over a period of 1 year.
- c) An effective way to study evolution is to...
 A read news reports that discuss important events.
 B look at pictures drawn by people who lived on Earth hundreds of years ago.
 C study animal or plant remains found in rock, called fossils.
 D study rocks and minerals.
- d) The fossil record is the most accurate way to study past life on Earth. It shows...
 A changes in life through layers of sedimentary rock.
 B all the fossils that scientists have found in the last 100 years.
 C plants and animals that live so long that they form into rock.
 D animals only, and what their ancestors looked like.

2. Circle the word **True** if the statement's true. Circle the word **False** if it's false.

- a) Evolution is the change of populations of living things over time.
 True False
- b) Life on Earth has not changed. It is the same as it was thousands of years ago.
 True False
- c) Paleontologists are scientists that study fossils to find out more about evolution.
 True False
- d) Plant and animal remains buried in sedimentary rock become fossils within the sedimentary layers.
 True False



Evolution and the Fossil Record

3. Use a dictionary to look up the definition of **FOSSIL** and **EVOLUTION**. Write down the dictionary's definition, and then write your own definition of each word.

- a) fossil (dictionary): _____
 b) fossil (own definition): _____
 c) evolution (dictionary): _____
 d) evolution (own definition): _____

Extension and Application

4. Uncover the Fossil!

To the right is a picture of a fossil. This fossil shows the remains of an animal that has been preserved from a long time ago. Pretend you are a scientist. What can you tell from looking at the picture? Use your imagination to come up with a story about this animal. While writing your story, think about the following questions: What was life like for this animal? What did it eat? Where did it live? How did it survive?



5. Write Your Own Job Description!

You have been hired by the State research lab to be their new paleontologist! You have an important job to do! A paleontologist is a scientist that studies fossils and evolution. Many people are relying on you to uncover important information about life on Earth and how it has changed over time. Use research tools (internet, encyclopedia, books) to find out more about what a paleontologist does. Once you have collected enough information, write your own job description. After you have written it, share it with a partner. He or she should be able to get a good impression of what your job is all about!



A Day in the Life of a Paleontologist!

In this activity, you will pretend you are a paleontologist heading out into the field! Your 'field' for this activity will be the schoolyard. In groups of 3 or 4, you will investigate what life exists in your schoolyard. You might not find fossils from 500 years ago, but you will definitely find something to give you a glimpse of evolution in the schoolyard.

On your trip, you will need to bring the following:

- Pencil
- Paper (for recording what you find, and where you found it)
- A bucket or container to collect rocks
- Digging tool (small shovel or sandbox shovel)

When you are out in the schoolyard, pick an area that is going to be your dig site. Don't pick too large an area - you don't want to dig up too much of the playground!

Look for rocks and stones that appear different from typical, round and smooth rocks. Look for patterns, lines, different textures, etc.

Once you have collected enough evidence on your dig, return to the classroom and record your observations. In your notebook, write up a report answering the following questions:

- Where in the schoolyard did you carry out your 'dig'?
- What kind of vegetation was there at your dig site? (grass, gravel, etc.)
- Did you find any rocks that looked interesting? Describe them.
- Did you find any rocks that had a pattern on them?
- What did the patterns look like?
- Do you think you found a fossil?

Once you have answered these questions, draw a picture showing you working at your dig site. Next to this picture, draw a picture of all the items (for example, rocks) that you found at your dig site.



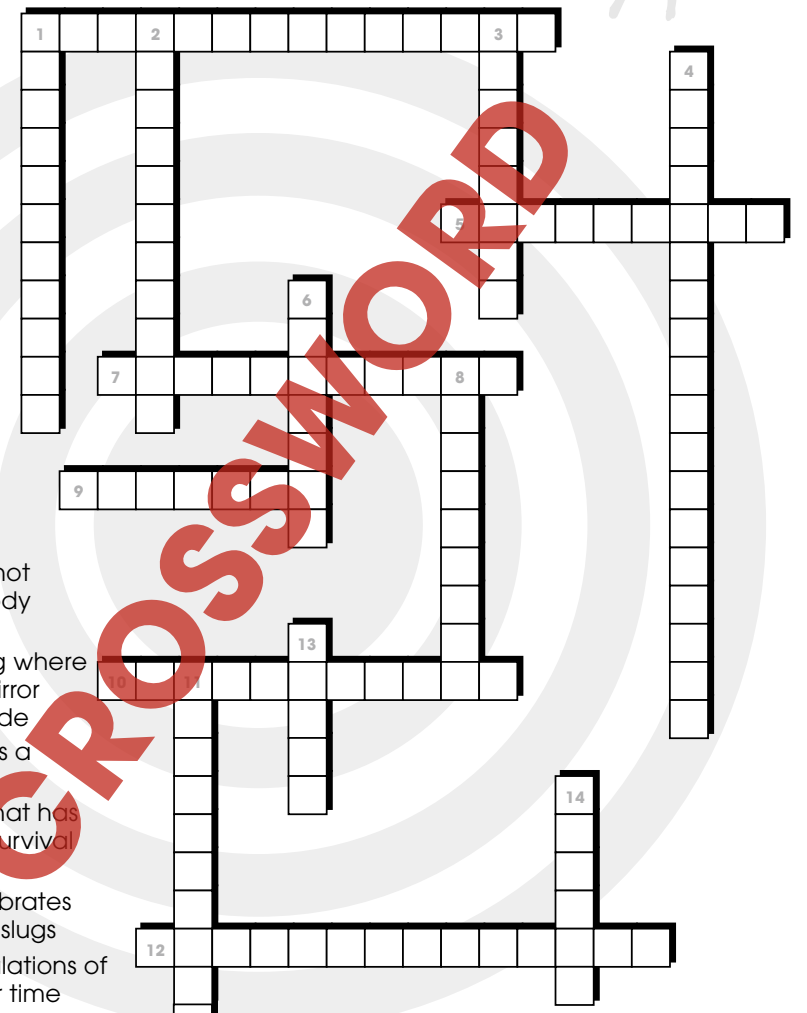
Crossword Puzzle!

Across

- 1 when things are divided into groups based on similarities
- 5 a person who studies living things
- 7 describes an animal that is able to stay at the same body temperature
- 9 a single organism
- 10 the surroundings where an animal lives
- 12 a scientist that studies fossils

Down

- 1 an animal that cannot control their own body temperature
- 2 describes something where the left side is the mirror image of the right side
- 3 a living thing such as a plant or animal
- 4 a physical feature that has been changed for survival purposes
- 6 the group of invertebrates including snails and slugs
- 8 the change of populations of living organisms over time
- 11 an animal that has a backbone
- 13 energy that comes from the sun
- 14 the remains of an animal or plant that are preserved



Word List: biologist, classification, coldblooded, environment, evolution, fossil, mollusk, organism, paleontologist, physical adaptation, solar, species, symmetrical, vertebrate, warmblooded



Comprehension Quiz

Part C

Answer the questions in complete sentences.

1. What is the difference between a warm-blooded animal and a cold-blooded animal? 2

2. What does it mean to classify something? Give an example to support your answer. 2

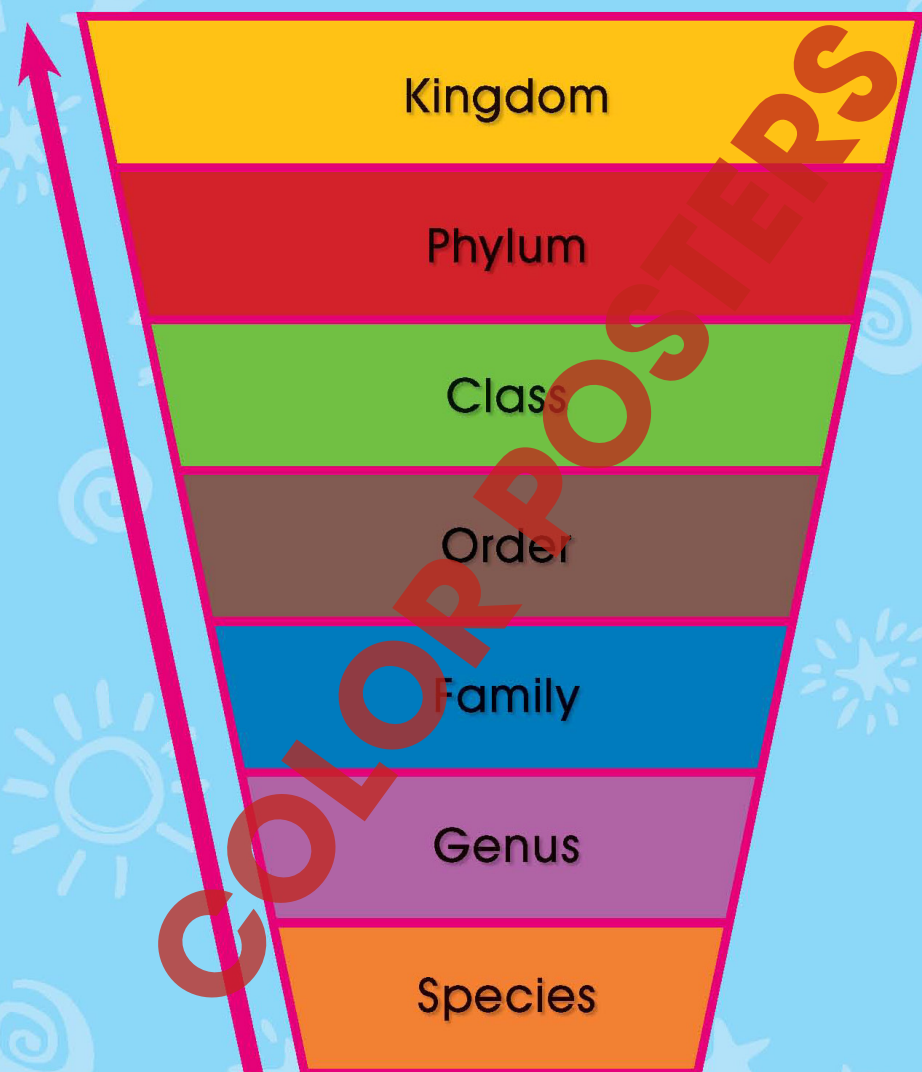
3. Why are vertebrates called "the most advanced organism on Earth"? 2

4. What is a physical adaptation? Use information you have learned about the koala to support your answer. 2

5. What is evolution? How do scientists gather information about evolution? 2

SUBTOTAL: /10

Classifying Animals





The Lake Habitat Thermometer

For this activity, you will need:

- A thermometer
- The picture of the "Lake Habitat"
- Information resources (like the internet or an encyclopedia)

Look at the picture of the "Lake Habitat".
Then read the following description of it:

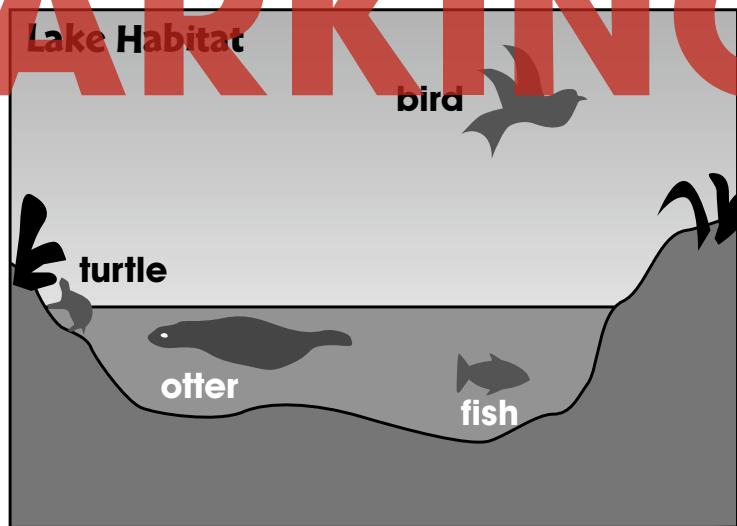
The current temperature of the air is 47 degrees F.
The highest temperature of the water is 37 degrees F.
The temperature of the soil is 49 degrees F.
The date is January 9. The time is late afternoon.
The sky is very cloudy.

While you are reading the above description, look at your **thermometer**.
Can you find the above temperatures on your thermometer?
Work with a partner if you are having trouble.

In your notebook, copy down the following questions.
Answer them using what you have learned about warm-blooded
and cold-blooded animals, and your information resources.

Questions:

1. Approximately what is the body temperature of the fish?
2. Approximately what is the body temperature of the otter?
3. Approximately what is the body temperature of the bird?
4. Is there anything the fish can do to increase its body temperature to much more than about 37 degrees F?
5. How well is the otter insulated in the cold winter?
6. How well is the fish insulated?
7. If an animal is poorly insulated, what is the disadvantage in cold weather?



3.

Answers will vary

4.

Answers will vary

5.

Answers will vary

10

1. 37° F (same temperature as its surroundings)
2. 100° F (temperature of most mammals when active)
3. 98° F (temperature of most birds when active)
4. No - can only swim to the surface where there is more sunlight on a sunny day
5. Fairly well - it has fur and layers of fat to insulate it
6. Not well - it has scales rather than fur and very little body fat
7. Body temperature drops as the temperature of its surroundings (water or air) drops

13



EASY MARKING ANSWER KEY